

I'm not robot!

Unit 1: Physics	Unit 2: Chemistry	Unit 3: Biology
Unit 4: Physics	Unit 5: Chemistry	Unit 6: Biology
Unit 7: Physics	Unit 8: Chemistry	Unit 9: Biology
Unit 10: Physics	Unit 11: Chemistry	Unit 12: Biology

AS GCSE Applied Science Unit 2 Energy Transfer Systems Revision Pack

Water Molecules

Water molecules are made of two hydrogen atoms and one oxygen atom.

H_2O

Blood Pressure

Blood pressure is the force of blood pushing against the walls of the arteries.

It is measured in mmHg.

Normal blood pressure is 120/80 mmHg.

Energy Transfers

Energy can be transferred from one store to another.

Energy can be transferred from the Sun to the Earth.

Energy can be transferred from a battery to a lamp.

Respiration: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

Power

Power is the rate of energy transfer.

$P = \frac{E}{t}$

Energy

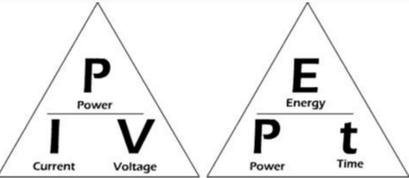
Energy is the ability to do work.

Energy is measured in Joules (J).

Current

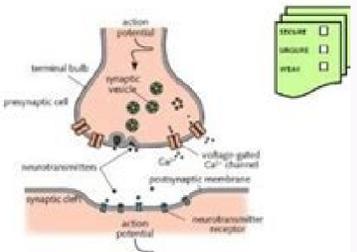
Current is the flow of electric charge.

Current is measured in Amperes (A).



B NERVOUS TISSUE (III)

- Synapses**
- When the nerve impulse reaches the end of the neurone, it must cross a gap called a synapse to get to the next neurone or the effector cell.
 - A nerve impulse crosses the synapse in the form of a chemical transmitter called a neurotransmitter.
 - Neurotransmitters diffuse across the synapse and initiate an action potential in the neurone at the other side. The presynaptic neurone ends in a swelling called the synaptic bulb and it contains many mitochondria as ATP is needed.
 - The neurotransmitters are stored in temporary vesicles in the synaptic bulb that can fuse with the surface to release the neurotransmitters into the synaptic cleft.
 - They also contain voltage-gated calcium ion channels.



- Structure
- Structure
- Structure

Problems that can occur:

Parkinson's disease is a genetic disease that affects the nervous system. Parkinson's sufferers are not able to produce the naturally occurring chemical dopamine, a neurotransmitter that helps smooth and normal movements. Without this, people show symptoms of:

- slow movement
- speech problems
- tremors when moving
- poor balance

The drug, L-dopa, replaces the dopamine that is lost in people with Parkinson's disease. Serotonin is another of the body's naturally occurring neurotransmitters. It is normally active in the brain and can cause problems if it is not produced. Some forms of depression are caused by a reduced amount of serotonin in the brain.

Q:

Nerve impulses are transmitted across synapses by neurotransmitters. The diagram shows what happens to a neurotransmitter called acetylcholine in the synaptic cleft.

1. Explain how these pesticides kill small animals.

Top Tip

Practice making a concept map of the nervous system. Use a different color for each neurone.

How to use this book

Practical skills are at the heart of any science qualification. Your AQA GCSE Science course requires you to develop these skills through completing a series of required practicals, which you will then be tested on in your exams. This lab book will help you record the results of your practical work, and provide you with some guidance so that you get the most out of your time completing each practical. Ensure you write down everything you can about your practical work – remember you can refer back to this book when you're revising!

Learning outcomes
This is a summary of what you should have accomplished by the end of each required practical.

Apparatus list
Your teacher will ensure that all the apparatus you need for the practical can be found in the classroom. You can use this list to check that you have everything you need to start your work.

Maths skills required
This is a good reminder of the skills you will need to master and practise on your science course, which will be tested in your exams. There are also questions included throughout that let you practise your maths skills.

Formulae
Any formulae you need to know to complete your practical work are shown here. A full list of formulae can be found on pages 97 and 98.

Safety notes
You should always be aware of safety when completing any practical work. This list will help you be aware of any common safety issues. Your teacher will advise on safety information for each practical, so pay attention.

Common mistakes
We've included some of the common mistakes people make during their practical work so that you can look out for them and hopefully avoid making the same mistakes.

Method
Always make sure you read every step of the method before you begin work. This will help you avoid mistakes and will give you an idea of what outcomes to look for as you complete each step.

Record your results
At the end of every method is place to record the outcomes of your work. Make sure you keep your notes clear and neat.

Check your understanding and Exam-style questions
For each practical, there are questions designed to check your understanding of the work you've just completed. There are also exam-style questions, which are included to help you prepare for questions about practical work in the exams. Some of these questions are designed to test your maths skills and to check your understanding of the apparatus and techniques that you've been using, as you'll be tested on these aspects of practical work in your exams.

Higher Tier
HT If you see this symbol next to a question, then it is designed for Higher Tier content only.

Teachers should always ensure they consult the latest CLEAPSS safety guidance before undertaking any practical work.

Last updated 22 February 2018 This resource is designed for Level 3 students sitting the Edexcel Applied Science 2016 course. The guide covers all of Unit 1, Learning Aims A, B and C (Chemistry, Biology and Physics) examination content. Space is provided after each topic for students to make notes. Each section also includes some questions (taken from Edexcel's sample exam papers). *Please note, the final page states that students should now complete the sample exam papers included. These papers are available to download from the Edexcel website. *Creative Commons "Sharealike" Select overall rating (no rating) Your rating is required to reflect your happiness. Write a review Update existing review If it's good to leave some feedback. Something went wrong, please try again later. Great resource, thank you for sharing! Empty reply does not make any sense for the end user. Have my exam tomorrow and this has made me feel confident and also ready! Empty reply does not make any sense for the end user. Thank you for your help here! Empty reply does not make any sense for the end user. Brilliant resource, thank you! Empty reply does not make any sense for the end user. Report this resource to let us know if it violates our terms and conditions. Our customer service team will review your report and will be in touch. Ideal for classroom or independent study. This Revision Guide with ActiveBook is the smart choice for learners studying for the externally assessed units 1, 3, 5 and 7 of the new BTEC Nationals in Applied Science qualifications. The Revision Guide is accompanied by an ActiveBook (eBook) so that learners have the choice and flexibility to access materials anytime or anywhere. The visually engaging format breaks the content down into easily-digestible sections for students and provides hassle-free instant-access revision for learners. Clear specification fit, with revision activities and annotated sample responses for each unit to show students how to tackle the assessed tasks. Written with students in mind - in an informal voice that talks directly to them. Designed to be used alongside the Workbook with clear unit-by-unit correspondence to make it easy to use the books together. The second edition has been produced to reflect the additional guidance documents made available to help centres understand the depth to which they need to teach the specification.

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Depending on what you all find most useful, we may link out to individual unit study groups. Let us know what you would find most useful, and we will try our best to set it up Resources Hello I'm on my first year of taking a BTEC level 3 applied science course and I've really enjoyed it however I've been finding it really hard to get websites to revise and make more notes so that I can get distinctions. Are there any websites, YouTube videos/channels or revision guides that focus on the level 3 applied science BTEC course?? Thank you! (Original post by Sharonelle Gucci) Hello I'm on my first year of taking a BTEC level 3 applied science course and I've really enjoyed it however I've been finding it really hard to get websites to revise and make more notes so that I can get distinctions. Are there any websites, YouTube videos/channels or revision guides that focus on the level 3 applied science BTEC course?? Thank you! Have you got the BTEC revision guide? 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